Provider Update:
Surveillance and Prevention of Work-Related Burns

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Safety & Health Assessment & Research for Prevention – **SHARP**
http://www.lni.wa.gov/Safety/Research

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Thank you, once again, for the information you provide regarding hospitalized occupational burns. Hospital reports are essential to the completeness and accuracy of our surveillance system. In fact, 22% of our data could not have been obtained without your reports.

Surveillance data have revealed that a substantial proportion of burn injuries have resulted from electrical sources. This update provides some information on these injuries.

Thanks again for your participation, and please give us a call if you have any questions, concerns, or suggestions.

Sincerely,
Jena Jones
Research Analyst

Data Highlights

- 175 workers were hospitalized for burns received on the job from September 2000 through September 2003.
- 18 of those workers died as a result of their injuries.
- 39 cases could not have been obtained without hospital reporting.
- 37 burns were caused by electrical sources.

SHARP's Mission

Conduct research, monitoring, and demonstration projects that promote healthy work environments and prevent workplace injuries and illnesses.

Electrical Source Burns

To date, 37 (21%) of the burn cases received through our surveillance system were due to electrical sources. This category includes both direct shocks from electrical sources, as well as thermal burns caused by electrical flashes (e.g., electrical arc that catches a worker's clothes on fire.) One worker was fatally electrocuted.

All workers were male and the average age was 38. Thirteen (35%) were either electricians or electrical powerline installers and repairers. Three were involved in varying types of construction, three were agricultural workers, and three were engineers. There was one worker each in metal working, wood working machine operation, truck driving, production and auto body repair. Ten were unclassified.

Of the 23 workers where data on severity were available, 13 reported total body surface area (TBSA) burns of ≤10%. Six were burned on 11-20% of their body. Three sustained burns to >20-30% of their TBSA. One person was burned on 55% of his TBSA.

In 14 cases (38%), electrical boxes arced, causing workers to be shocked and/or their clothing to catch on fire. Ten (27%) burns occurred from direct contact with a live wire on the ground. In two of these cases, another worker reenergized a wire that the injured worker was holding. In seven other cases, the burn was caused by a conduit striking an overhead powerline and then grounding through the worker. One worker's story is provided in the box that follows. Three (8%) burns were due to an electrical short or spark (possibly related to an equipment malfunction) igniting a flammable substance. One worker was burned when his electrical tester shorted out and exploded. There was not enough information in two cases to determine the cause.

Crane contacts overhead powerlines and is grounded through worker.

A 59 year-old male truck driver was working on the ground, using a tagline to steady a tank that was being moved by a mobile crane. The crane contacted a 115 KV overhead powerline. The electricity came through the crane and truck, contacted the right side of the worker's body and grounded through his feet. He was thrown 8 feet from the shock. The electricity caused severe third degree burns to his right side including his arm, chest wall, abdomen and both feet. The burns covered 10 percent of his TBSA. His feet were so severely burned that the worker's right leg had to be amputated below the knee and part of his left foot was also amputated.

Information for Action

The more we learn about the factors that contribute to work-related burn injuries, the more effectively we can target our resources toward future research and interventions.

For example, data on electrical source burns were used to guide SHARP's "Healthy Workplaces" project, which is currently collaborating with the National Electrical Contractors Association and the International Brotherhood of Electrical Workers to identify safety and health concerns and potential solutions. SHARP is developing educational materials to assist the industry control hazards that could lead to burns, as well as other serious injuries.

Additionally, information from our burn surveillance program was used to assist in the production of the enclosed hazard alert regarding flammable solvents.